

We Claim:

1. In a method of making a gaseous fluid power device having a housing that defines a chamber and contains at least one moving element that moves relative to the chamber and thereby changes the density of the gas in the chamber, the moving element having a close running fit with the chamber, the improvement wherein after the fluid power device is assembled the device is driven so as to move the element relative to the chamber and while the device is being so driven a coating material is introduced into the chamber to coat surfaces of the element and the chamber, and the coating material is cured at least partially while the device is being so driven so as to adhere the coating to surfaces of the element and the chamber and reduce clearances between the element and the chamber.
2. The improvement of claim 1, wherein the coating material is a material that cures to a solid lubricious surface.
3. The improvement of claim 1, wherein the coating includes a lubricant in a liquid binder that cures solid.
4. The improvement of claim 1, wherein the coating material is added to the chamber through an intake port of the chamber.
5. The improvement of claim 1, wherein the device is operated at a relatively slower speed when the coating material is added to the chamber, and thereafter is operated at a relatively faster speed.
6. The improvement of claim 5, wherein the device is operated at the relatively slower speed for a period after the coating material is added to the chamber and after the period the device is operated at the relatively faster speed.
7. The improvement of claim 1, wherein the device is a pump, the element is a pumping element and the chamber is a pump chamber.

8. The improvement of claim 1, wherein the fluid power device is a Roots blower, the element is a lobe, the device has a second lobe that mates with the element, and surfaces of both lobes and the chamber are coated with the coating material.

9. A gaseous fluid power device having a housing that defines a chamber and contains at least one moving element that moves relative to the chamber and thereby changes the density of the gas in the chamber, the moving element having a close running fit with the chamber, the improvement wherein the element and the chamber each have solid coatings on at least portions of their surfaces, said solid coatings having been deposited in liquid form on the surfaces of the element and chamber by flowing the coating into the chamber and onto the element while operating the device and at least partially curing the coating deposited on the element and the chamber while operating the device, the coating defining respective solid surfaces when cured, and at least a portion of the surface of a solid coating on the chamber mates in a close running fit with a portion of the surface of a solid coating on the element.

10. The device as claimed in claim 9, wherein the device is a pump.

11. The device as claimed in claim 9, wherein the device is a Roots blower.

12. The device as claimed in claim 9, wherein the solid surface of the coating is lubricious.

13. The device as claimed in claim 8, wherein the device is a Roots blower having two lobes, each lobe being coated with the coating and mating with the other lobe and with the chamber.